A.2.B.10.17TN
Answer to Problem 17:

Example student response:

"Any number to the power of zero is equal to 1. When an exponent is negative, the original number and the exponent change to the reciprocal of the original number and the exponent becomes positive."

Students might select example equations to describe the situations where the exponent is either zero or negative. Creating a table to look at the patterns may also be a useful tool.

$$4^2 = 2^4 = 16$$
$$= 2^3 = 8$$
$$4^1 = 2^2 = 4$$
$$= 2^1 = 2$$
$$4^0 = 2^0 = 1$$
$$= 2^{-1} = \frac{1}{2}$$
$$4^{-1} = 2^{-2} = \frac{1}{4}$$